Topic Discussion Sessions

BREAK OUT SESSIONS

10:40 TO 12:00

TOPIC LEADER SUMMARIES

13:30 TO 14:30

GENERAL DISCUSSION

14:30 TO 15:00

Topic Discussion Sessions

- What are the science issues, gaps, unresolved problems in
- What are the high potential new technologies that may co
- What are some of the current strong contributions in this

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Topic Discussion Sessions

- One hour break-out by topic
- Group discussion on issues
- Sumary findings
- Summary presentation by group leader

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FOR EACH TOPIC AREA:

- **List five important unresolved research issues, challenges or questions in this topic area.**

- **List five promising technology opportunities (models, concepts, tools, software,etc)**

- **Identify significant underlying science-based theory or emerging concepts for effective collaboration.**

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Shared Meaning and Agent Interfaces

Alterman
Warner
Madni
Bankes
Freeman

Human-Centric Design of Collaboration Interfaces

Hayne
Kirsh
Brock
Lawless
Welch

Collaboration Models and Computational Methods

Porter/Keel
Hicinbothom
Lange
Seymour
Murdock
Noble
Yufic

Representation and Transfer of Meaning

Nosek
Tversky
Hurley
McComb
Funk/Miller
Fleming
St John

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BACK UP II

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GENERAL DISCUSSION / WRAP - UP

- Comments on Topic Group Findings
- Did the Workshop Draw the Right Audience
- What About the Mix / Emphasis of Papers
- How to Improve the Workshop
- Disciplines Left Out

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Potential Contributing Technologies

- Shared Mental Models
- Group Knowledge Elicitation
- Transactive Memory
- Team Decision Making
- Cognition of Problem Solving
- Group Sensemaking
- Augmented Visualization
- Convention in Joint Activity
- Human-Agent Collaboration
- Dynamic Task Allocation in Teams
- Digital Transfer of Meaning
- Coordinating Representations
- Cognitive Collaboration Architectures
- Hybrid Collaborative Environments

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FUTURE DIRECTIONS

- Crisis/Problem Prediction
- Define Cognitive Performance Metrics
- Reconfigurable Information Fusion
- Decision Making through Synthetic Experience
- Context Sensitive Filters
- Consultive Advisors
- Real-time What-if Analysis

THE END

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Thrust: Representation and Transfer

Unresolved research issues/challenges:

- How to resolve cultural knowledge processing biases in a group shared environment?
- How to merge neuronal knowledge processing with cognitive models of knowledge processing
- How to effect transfer of uniquely held knowledge in a distributed, heterogeneous, quick response group environment
- How to train agents to understand and react to human decision making variability
- Computational models of Naturalistic decision Making
- ----------

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Thrust: Representation and Transfer of Meaning

Promising Technologies:

- Web-based Knowledge Elicitation Tools, e.g. simplified Bayesian Belief Nets
- Augmented Visualization
- Development of shared mental models
- -------
- --------
- ------

Thrust: Representation and Transfer of

Underlying science/concepts/tools:

- Transactive memory
- Convention in joint activity
- Cognitive Task Analyses
- Knowledge Elicitation
- -----

Thrust: Representation and Transfer of

Metrics & Measures of Effectiveness:

- Measures of shared understanding and time needed to achieve it.
- Measures of effectiveness of digital decision aids
-
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Potential Military Impact:

- **Provide Knowledge-Enabled Crisis Management Capability**
- **Provide Joint, Coalition, NGO Decision-Making Interoperability**
- **Enable Improved Battlespace Situational Awareness**
- **Enable Superior Speed of Command and Course of Action Selection**
- **Provide Virtual Command Presence**
- **Collaborative Decision Making for Distributed**